

Y-12 National Security Complex

810 Submittal

WD Chappell

**Empowered Official / Export Manager
B&W Y-12**

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- The Foreign Research Reactor (FRR) Uranium Supply Program at the Y-12 National Security Complex (Y-12) serves as the United States (U.S.) supplier of enriched uranium for fuel and medical isotope production targets to research reactors around the world.
- The FRR Supply Program supports several of the National Nuclear Security Administration (NNSA) Programs, one is the Reduced Enrichment Research and Test Reactors (RERTR), the United States (U.S.)

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- The **Reduced Enrichment for Research and Test Reactors (RERTR) Program** develops technology necessary to enable the conversion of civilian facilities using high enriched uranium (HEU) to low enriched uranium (LEU) fuels and targets.
- The RERTR Program was started by DOE in 1978, Over 40 research reactors have been converted.

SITUATION

- The Y-12 National Security Complex (Y-12) is a key participant in the NNSA Convert Program (RERTR)
- Y-12 has been fabricating DU-Mo, LEU-Mo and HEU-Mo coupons and foils. LEU-Molly is key in the conversion of research reactors from HEU to LEU for operations.

“U-Molly Operations”

SITUATION

NNSA: Foreign fabricators are being desired for U-Molly material for some Foreign Reactors. NNSA wanted Y-12 to “teach” some foreign vendors how to produce these U-Molly foils/components.

Some of the technology from the U-Molly process is applicable to all fuel fabrication

SITUATION

Technology for fuel fabrication controlled by DOE:

From 10 CFR 810.2 Scope:

“Applies, but is not limited to, activities involving nuclear reactors and other nuclear fuel cycle facilities for the following: fluoride or nitrate conversion; isotope separation (enrichment); the chemical, physical or metallurgical processing, fabricating, or alloying of special nuclear material; production of heavy water, zirconium (hafnium-free or low-hafnium), nuclear-grade graphite, or reactor-grade beryllium; production of reactor-grade uranium dioxide from yellowcake; and certain uranium milling activities”

Y-12 filed for 10 CFR 810 authorization

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RESPONSE From DOE/NNSA:

DOE Exempt from 10/CFR 810 requirements

- What does this mean?
 - That no actual evaluation of information was undertaken authorized on a “TECHNICALITY” not on material content

Basically, we received a “not applicable email”.

- This raised concerns to parameters – where does this NNSA exemption end and Y-12 responsibility begin?

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- Some parts of the U-Molly process are applicable across all fuel fabrication applications, was this really full authorization to disclose such information?
- Eight Months to negotiate: Y-12 Export Office wrote authorization parameters and sent to NNSA (after extensive discussion with SMEs and many communications with HQ).
- The NNSA Program Office would need to give us acceptable scope boundaries.

FROM DOE MEMO TO Y-12 1/3/2013

FROM NNSA HQ PROGAM in a Memo to Y-12 1/3/13

Y-12's support for the GTRI in this program consists primarily of developing the fabrication process for producing the LEU/DU U-Mo fuel via casting machining and rolling. With regards to dissemination of information, GTRI relies on the Y-12 LEU U-Mo technical SME to ensure that the technology and related information being released are specific to the LEU U-Mo fuel development programs. Included in this information may be analysis methods and data from analysis that support mechanical or chemical testing at various phases of the process. Some of the test methods and fuel fabrication process data used are generic and may be applicable to any type of fuel fabrication and the Y-12 SME will consider this as part of the data release process. Further control of the information provided will be at the discretion of the recipient.

Y-12 is requested to release information on U-Mo fuel fabrication development under GTRI efforts per the above needs and guidance.

KEYS – Responsibility/liability and further control of information.